



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005



Job No.: CTCE/BBMP/KRIDL/W.No.13/GSB-2/2018-19

29.01.2019

TEST REPORT ON GRADATION FOR CLOSE-GRADED GRANULAR SUB BASE

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: Close Graded-II
Technical Reference	: IS : 2720 (Part - 4) 1985 (RA-2010), MORTH Table : 400-1
Date of Testing	: 29.01.2019



Oven Dry Wt (gm) : 5000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
53	0	0	0	100	100
26.5	350	350	7.00	93.00	70-100
9.5	1650	2000	40.00	60.00	50-80
4.75	655	2655	53.10	46.90	40-65
2.36	690	3345	66.90	33.10	30-50
0.425	525	3870	77.40	22.60	15-25
0.075	850	4720	94.40	5.60	3-10
PAN	280				
Total	5000				



* Information is furnished by the Customer/Representative

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading II

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Job No.: CTCE/BBMP/KRIDL/W.No.13/GSB-II/AL/2018-19

Date 29.01.2019

TEST REPORT ON ATTERBERG LIMITS TEST FOR GRANULAR SUB BASE

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: GSB (Close Graded-II)
Technical Reference	: IS : 2720 (Part - 5) 1985 (RA-2010), MORTH Table : 400-1
Date of Testing	: 29.01.2019



Tests on filler screen materials (As per Table : 400-13)

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	23.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading II

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Job No.: CTCE/BBMP/KRIDL/W.No.13/CSR-01/866b/CEMENT/2018-19

Date: 30.01.2019

TEST REPORT ON CEMENT

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of Work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: Cement
Sample Received on	: 28.01.2019
Period of Testing	: 28.01.2019 to 30.01.2019



The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	28.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	155 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	370 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

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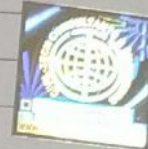


Job No.: CTCE/BBMP/KRIDL/W.No.13/CSR-01/866b/SAND-Gradation/2018-19

30.01.2019

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of Work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: Fine Aggregates (M-Sand)
Technical Reference	: IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	: 28.01.2019
Date of Testing	: 30.01.2019



Total Wt. of Aggregates in gms = 1000

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	97.20	90-100	90-100	90-100	95-100
2.36	80.90	60-95	75-100	85-100	95-100
1.18	57.90	30-70	55-90	75-100	90-100
600 Micron	36.40	15-34	35-59	60-79	80-100
300 Micron	20.40	5-20	8-30	12-40	15-50
150 Micron	5.40	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-II specific limits.

Note 1:

For crushed stone sands, the permissible limit on 150-micron IS Sieve is increased to 20 percent. This does not affect the 5 percent allowance permitted in 4.3 of IS 383 applying to other sieve sizes.

Note 2:

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Job No.: CTCE/BBMP/KRIDL/W.No.13/CSR-01/866b/AGG/GR/2018-19

30.01.2019

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of Work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: Coarse Aggregates (40mm)
Technical Reference	: IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	: 28.01.2019
Date of Testing	: 30.01.2019



Total Wt. of Aggregates in gms= 5000

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	97.00	95-100	85-100
20	32.88	30-70	0-20
10	11.88	10-35	0-5
4.75	2.88	0-5	-

Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

e:

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Job No.:CTCE/BBMP/KRIDL/W.No.13/CSR-01/866b/Cube/2018-19

01.03.2019

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of the work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: Cement Concrete
Technical Reference	: IS: 516-1959 (RA-2013)
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm ²
* Grade of Concrete	: M ₂₀
Compressive Strength as on	: 28 th day
Sample Received on	: 01.03.2019



Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)
1	01.02.2019	01.03.2019	8.110	495.8	22.04
2	01.02.2019	01.03.2019	8.320	478.7	21.27
3	01.02.2019	01.03.2019	8.218	526.3	23.39

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Job No.: CTCE/BBMP/KRIDL/W.No.13/Steel/2018-19

30.01.2019

TEST REPORT ON REINFORCEMENT STEEL

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Samples ID	: 10 mm Bar
Technical Reference	: IS: 1786-2008 (RA-2013)
Date of Testing	: 30.01.2019



Sl No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm2	Tensile strength (Ultimate stress) N/mm2	Elongation percent gauge length		
1	10	0.62	516	557	13.25	O.K	O.K

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CTCE/BBMP/KRIDL/W.No.13/CSR-01/866b/Cube/2018-19

06.03.2019

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	: Technical Manager, KRIDL, Bangalore.
* Name of the work	: Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	: BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	: Road Concrete
Technical Reference	: IS: 516-1959 (RA-2013)
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm ²
* Grade of Concrete	: M ₃₀
Compressive Strength as on	: 28 th day
Sample Received on	: 06.03.2019



Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)
1	06.02.2019	06.03.2019	8.097	706.9	31.42
2	06.02.2019	06.03.2019	8.200	715.6	31.80
3	06.02.2019	06.03.2019	8.231	720.2	32.01

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Job No.:CTCE/BBMP/KRIDL/W.No.13/CSR-01/866b/Pre Cast Slab/2018-19

15.02.2019

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CORE

* Customer	:	Asst. Executive Engineer, Project Sub Division, Dasarahalli Zone, BBMP, Bangalore.
* Agency	:	Technical Manager, KRIDL, Bangalore.
* Name of work	:	Improvements to roads and drains near Mallikarjuna temple PK's Colony slum in Mallasandra Ward No 13, BBMP, Bangalore.
* Reference	:	BBMP/AEE/PSD/PR/35/2018-19 Dated: 28.01.2019
* Sample ID	:	Pre Cast Slab
* Grade of Concrete	:	M ₂₀
Technical Reference	:	IS:516-1959 (RA- 2013), SP-24:1983.
Sample Received on	:	13.02.2019
Date of Testing	:	15.02.2019



Sl. No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m ³)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm ²)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm ²)	Equivalent Cube Compressive Strength (N/mm ²)
1	50.00	80.00	0.392	2495.55	1.60	0.957	32.62	16.61	17.94	18.75	23.44
2	50.00	81.00	0.402	2527.62	1.62	0.959	31.23	15.91	17.18	17.91	22.39
3	50.00	82.00	0.408	2534.06	1.64	0.961	33.23	16.92	18.28	19.02	23.77

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